GIGABYTE
TECHNOLOGY

GN-WLMM101

IEEE 802.11b PCMCIA Wireless LAN Card

User's Manual

http://www.gigabyte.com.tw

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Chapter 1. Product Overview

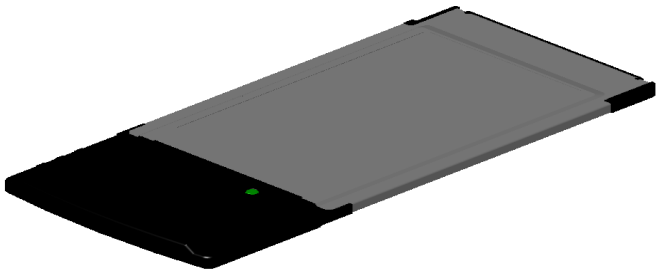
1-1. Introduction to The Wireless LAN Card

This wireless LAN (Local Area Network) card is composed of the IEEE 802.11b MAC, Baseband, and radio components, PCMCIA interface, and two built-in antennas. This product adopts the direct sequence spread spectrum (DSSS) technology and the DBPSK, DQPSK, and CCK modulation mode to provide a very stable wireless communication quality and an excellent signal receiver capability.
Our product features the compact size, low power consumption, and power management functions, and provides a high-speed wireless data communication. Therefore, our product is ideally suitable for being integrated into the personal mobile and handheld platform.

1-2. Features

- Conforms to IEEE 802.11b specification.
- Transmits data rate up to the maximum speed of 11Mbps.
- Dynamically scales the data rate to 11, 5.5, 2, and 1Mbps.
- Automatic power management to reduce battery consumption.
- Built-in diversity antenna.
- Supports 64-bit /128-bit WEP encryption.
- Driver supports Windows 98/98SE/Me and Windows2000/XP.

1-3. Physical Dimensions/Packaging



Dimensions: 118.4mm * 54mm * 6mm

This wireless LAN card conforms to the PC card Type II standard. There is one LED that glows or blinks to indicate the status of the card.

1-4. LED Indicating Light

- **Power:** This LED lights up when the card is powered on.
- **Scanning:** This LED blinks quickly when the card is scanning a network.
- **Linked:** This LED is continuously on while the card is linked with the network.

1-5. System Requirements

1-5-1. Supported Platform

IBM PC/AT compatible computer

1-5-2. Supported Operation System

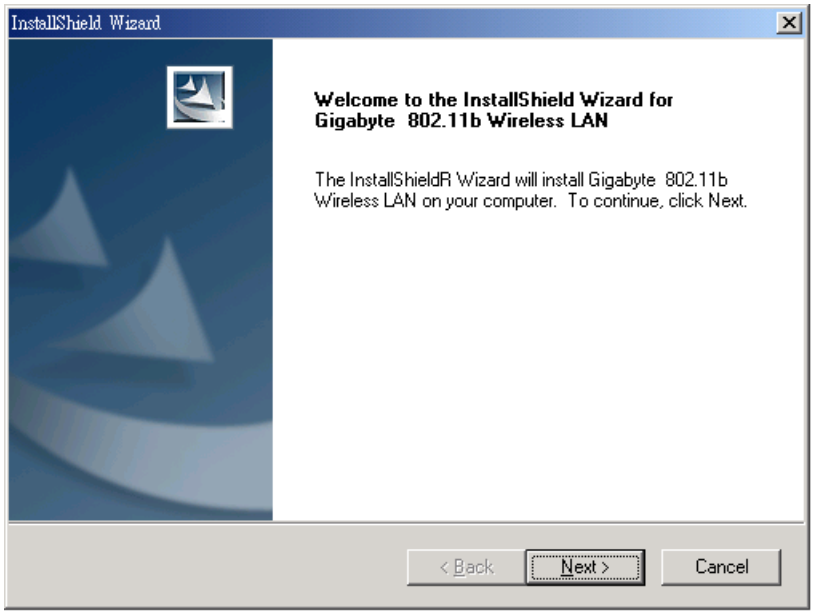
Windows 98/98SE/Me
Windows 2000/XP

Chapter 2. Installing the Wireless LAN Card

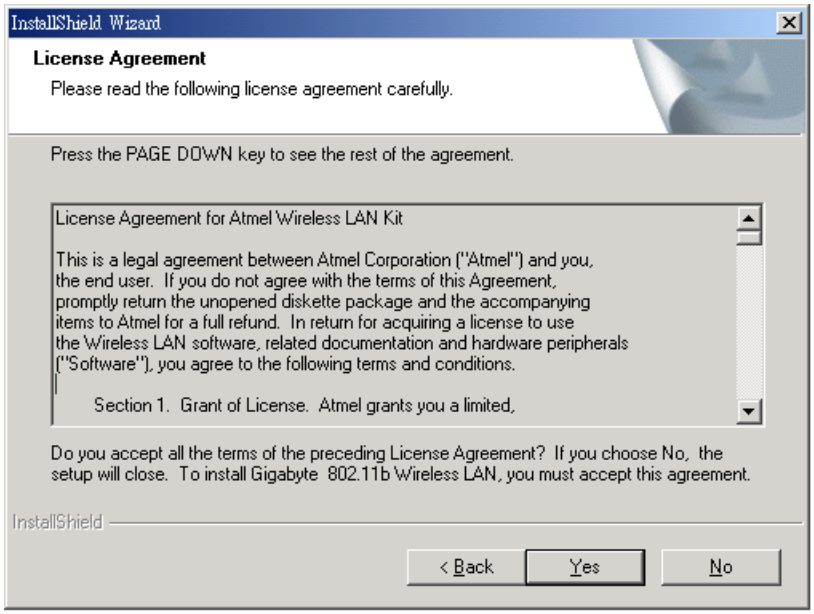
2-1. Installing The Driver & Utility (Applicable to any supported OS)

Step 1: Please make sure that you don't plug your card yet.
Step 2: Insert our setup CD into your CDROM drive, the following window will pop up.

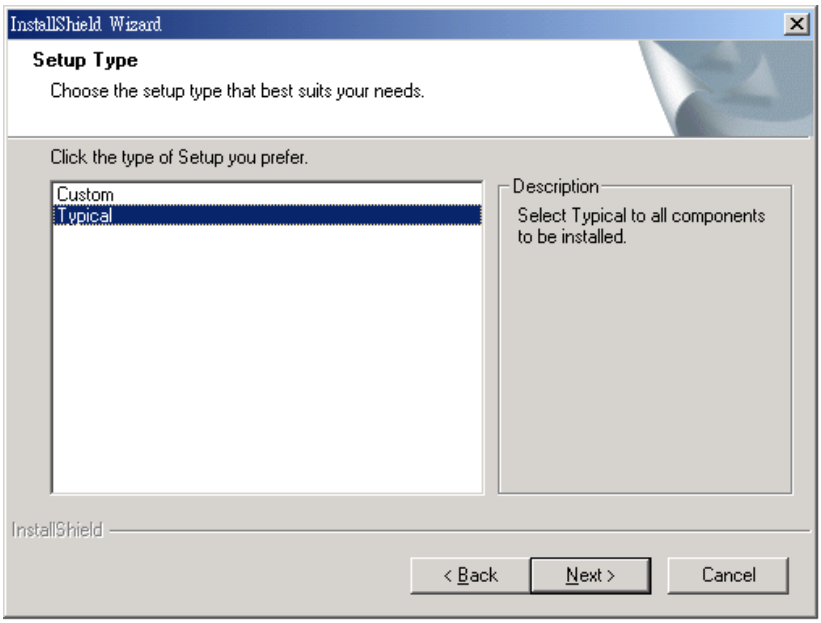
Step 3: Click "**Install Wireless LAN Driver**".


InstallShield Wizard
Welcome to the InstallShield Wizard for Gigabyte 802.11b Wireless LAN
The InstallShieldR Wizard will install Gigabyte 802.11b Wireless LAN on your computer. To continue, click Next.
< Back
Next >
Cancel

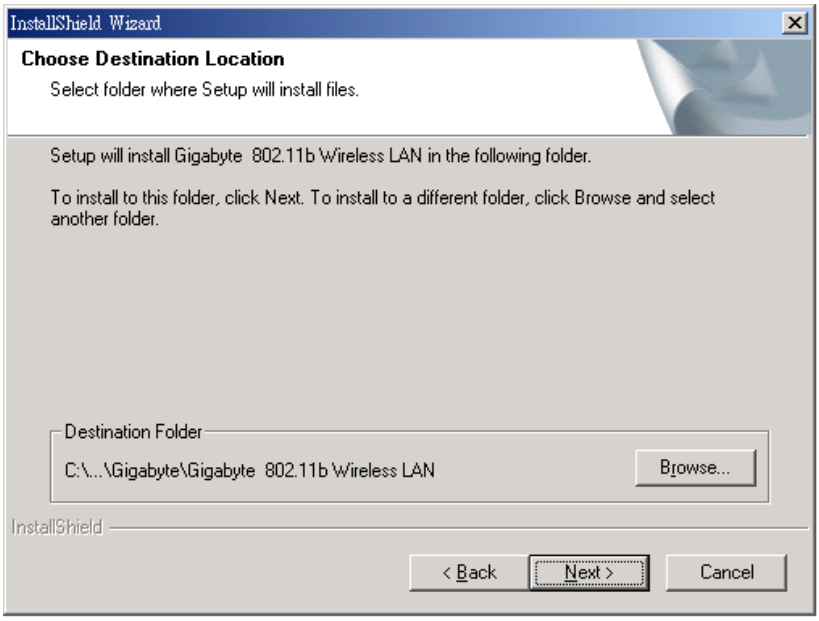
Step 4: Click "**Next**".


InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
License Agreement for Atmel Wireless LAN Kit
This is a legal agreement between Atmel Corporation ("Atmel") and you, the end user. If you do not agree with the terms of this Agreement, promptly return the unopened diskette package and the accompanying items to Atmel for a full refund. In return for acquiring a license to use the Wireless LAN software, related documentation and hardware peripherals ("Software"), you agree to the following terms and conditions.
Section 1. Grant of License. Atmel grants you a limited,
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Gigabyte 802.11b Wireless LAN, you must accept this agreement.
InstallShield
< Back
Yes
No

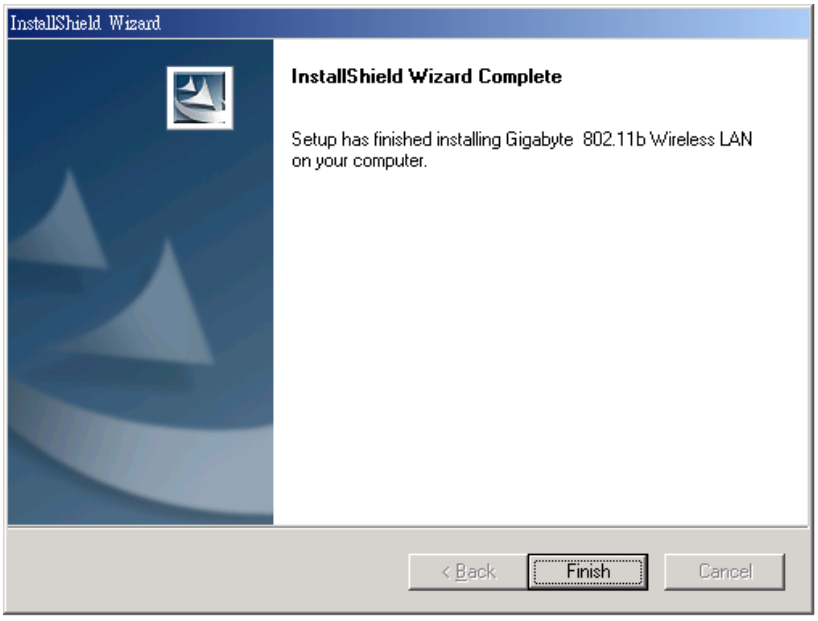
Step 5: Click "**Yes**". The wizard will ask you to click the type of setup.



Step 6: Select "**Typical**" and then click "**Next**". The wizard will ask you to provide the destination path of where the application will be installed.


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Gigabyte 802.11b Wireless LAN in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\...\Gigabyte\Gigabyte 802.11b Wireless LAN
Browse...
InstallShield
< Back
Next >
Cancel

Step 7: You can click "**Browse**" to set the path or simply only click "**Next**" to go on.



Step 8: Click "**Finish**", and then your installation is ok.

Chapter 3. Using The Utility

The Configuration & Monitor Utility is a powerful application that helps you to configure the card and monitor the statistics of the communication. Unlike the standard method of configuring the card via the operating system utilities (e.g. Control Panel), this application permits the dynamic modification of the configuration parameters while the card is operating. It also offers some more configuration options. Gigabyte offers the Configuration & Monitor Utility for Windows 98/98SE/Me, and Windows 2000/XP. It appears as an icon on the system tray of Windows every time the card is running (*see* ***Figure 3-1***). You can open it by double-clicking on this icon.

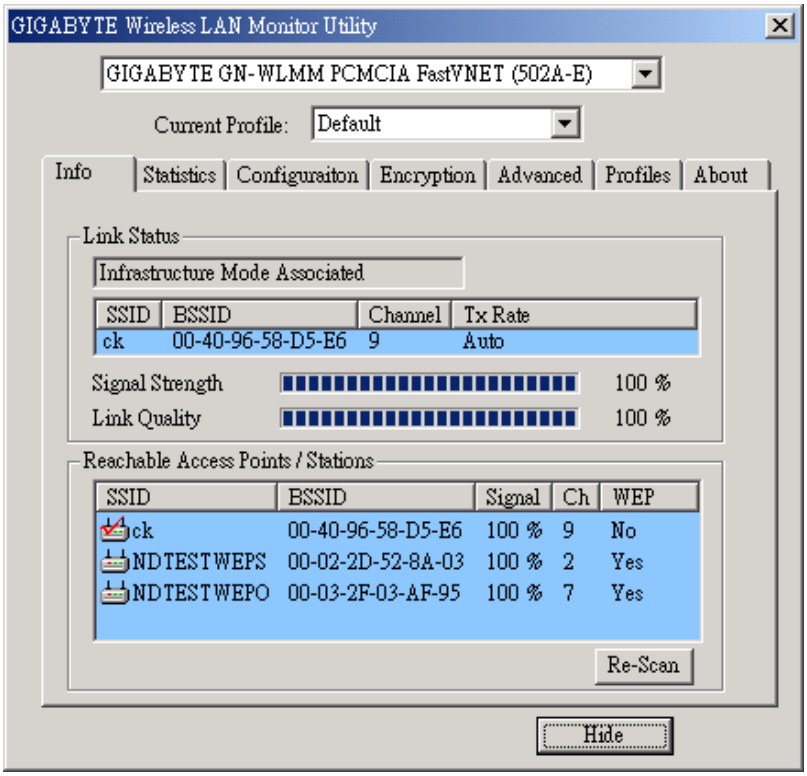
Figure 3-1. The icon of the Configuration & Monitor Utility

Note: Please keep in mind that the Configuration & Monitor Utility can be used to change the above configuration parameters when the card is active. When the card is not in use, please use the Control Panel method.

3-1. Info

The Info tab shows you the current link status of the wireless LAN card and the reachable assess points and the wireless LAN card. In the middle of the screen there is information about the status of the communication (the BSSID of the access point to which the card is associated, signal strength, and link quality).

Figure 3-2. Current link status of the wireless LAN card



Other items in the table are the detailed information about the link status, which are available only when the wireless LAN card is connected to an access point or other wireless LAN card.

SSID: Network name.

BSSID: MAC address of the base station.

Channel: The current channel used by the wireless LAN card.

TxRate: The current transmission rate used by the wireless LAN card.

Reachable Access Points / Stations:
This item will show you all of the 802.11b access points or wireless LAN cards in your wireless environment. The icon in the front of every item represents an access point or a wireless LAN card. You can add a network easily by clicking on the desired SSID.

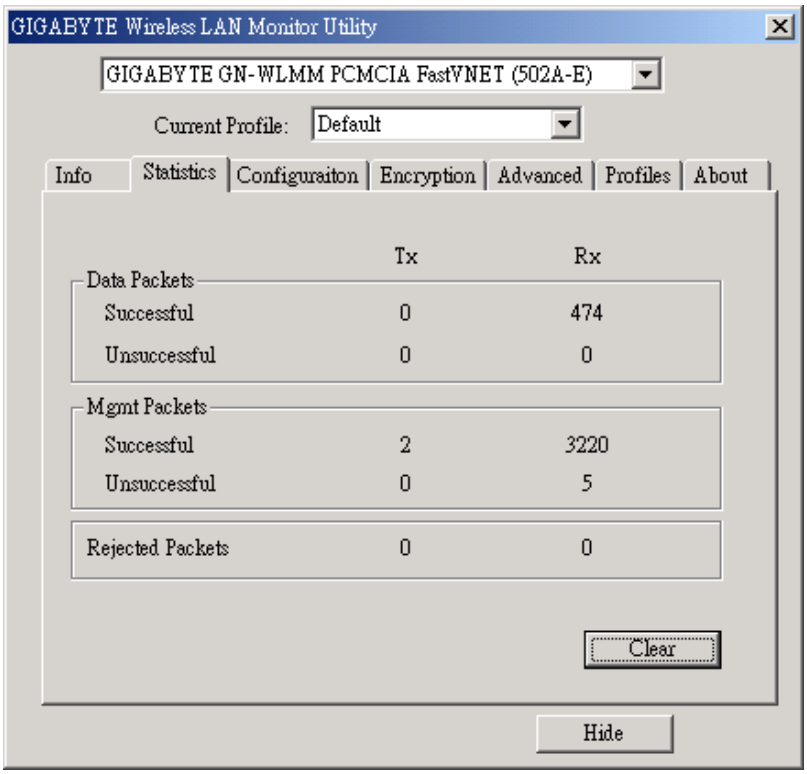
Signal: It shows the signal intensity of the currently connected base station.

Ch: The current channel used by the wireless LAN card.

3-2. Statistics

This option shows you to view the available statistic information (Data Packets, Management Packets and Rejected Packets). In order to renew or update this list of statistics, click the "**Clear**" button. In order to exit, click the "**Hide**" button at the bottom of the screen.

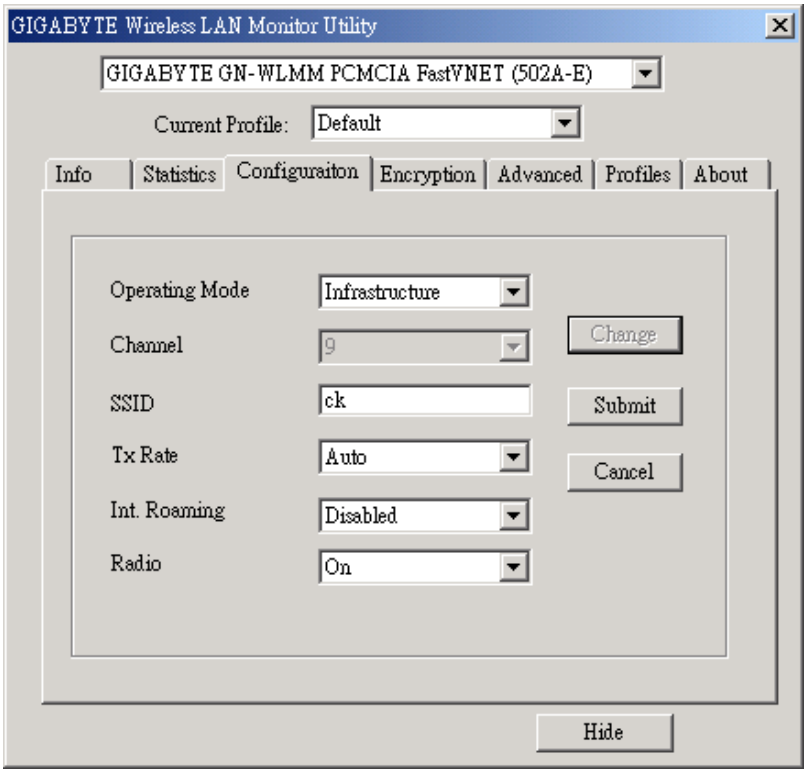
Figure 3-3. Statistic information available



3-3. Configuration

A typical screen of the application in Infrastructure mode is shown in Figure 3-4. The configuration parameters are shown at the top of the screen (Operating Mode, Channel, SSID, TxRate, Int. Roaming and Radio of the card). In order to change the configuration parameters, click the "**Change**" button, make your changes and then click "**Submit**" in order to save your changes.

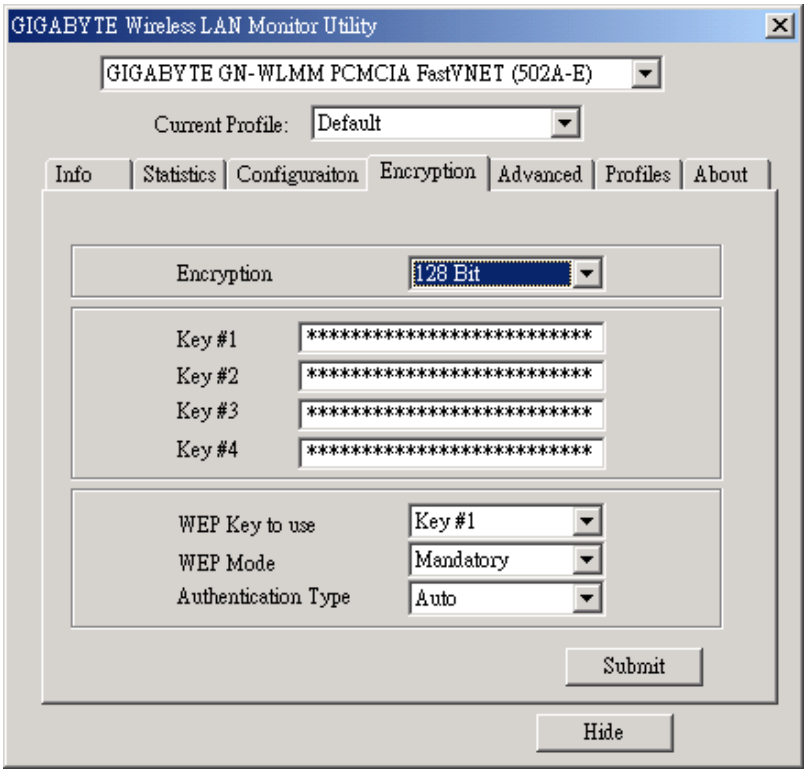
Figure 3-4. A typical screen of the application in Infrastructure mode



3-4. Encryption

By choosing this option in any of the two modes, you can set four different WEP keys and specify which one of them to use. First, either enable or disable encryption from the appropriate "**Encryption**" field (see *Figure 3-5* below). If you decide to use encryption, you can choose any of the available WEP keys (1 to 4). You also have the option to select the WEP mode (Mandatory/Optional). If you select "**Mandatory**", then not only WEP will be used, but also any other station needs to use WEP encryption in order to establish a communication with your station. This requirement is in line with the IEEE 802.11b standard. If, on the other hand, you choose "**Optional**", then your station can communicate with every other station regardless if they use WEP or not. Please keep in mind that the WEP keys must be in HEX format. Finally, you have the option to select whether *Open System*, *Shared Key, or Auto* authentication will be used. In order to take effect the changes you wish to make, click the "**Submit**" button at the bottom of the screen.

Figure 3-5. Encryption

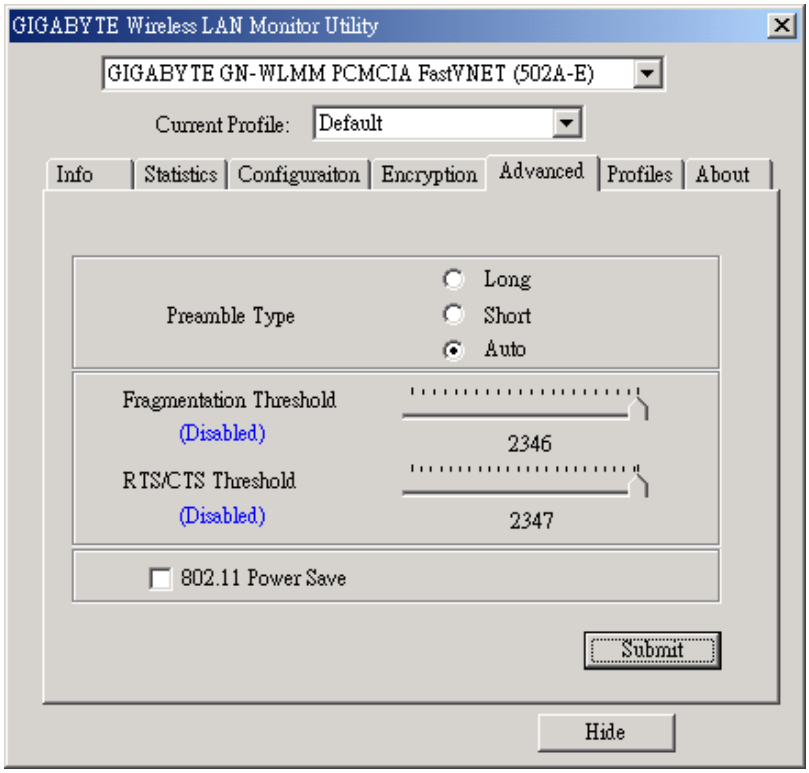


3-5. Advanced

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Preamble Type, Fragmentation Threshold, and RTS/CTS Threshold (*Figure 3-6*). *Figure 3-6* shows the default configuration for the advanced settings. The card has an auto-detection feature therefore when selecting "**Auto**" for the preamble type it automatically selects the Preamble Type depending on the Access Point Preamble type

Note: In order to enable the Fragmentation and the RTS/CTS Threshold parameters move the slide bar with your mouse and then use the right and left arrow keys of your keyboard in order to select an exact number.

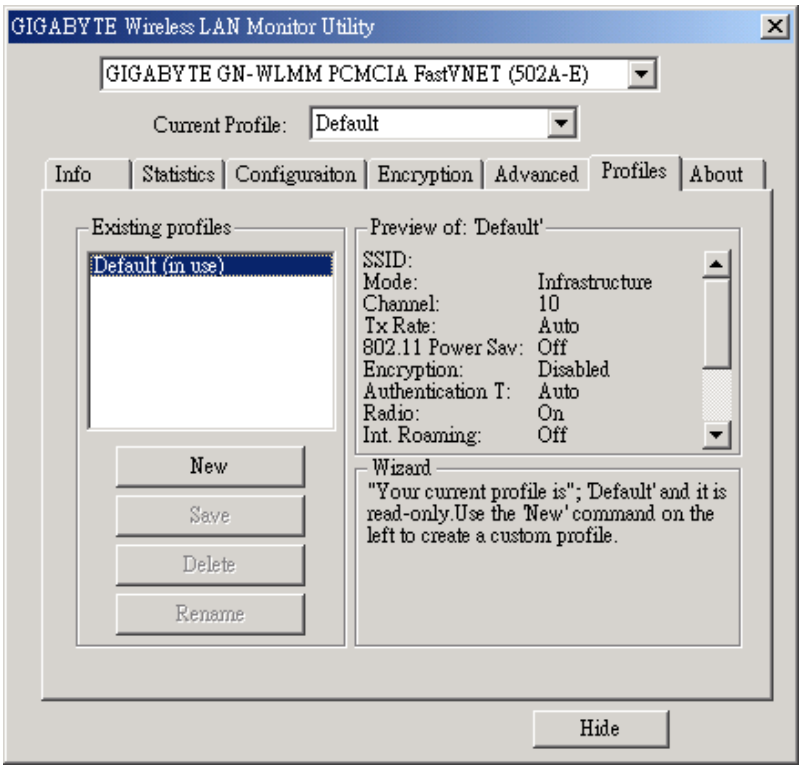
Figure 3-6. Advanced Settings



3-6. Profiles

This option shows you to view your current profile. You can click "**New**" to create a custom profile.

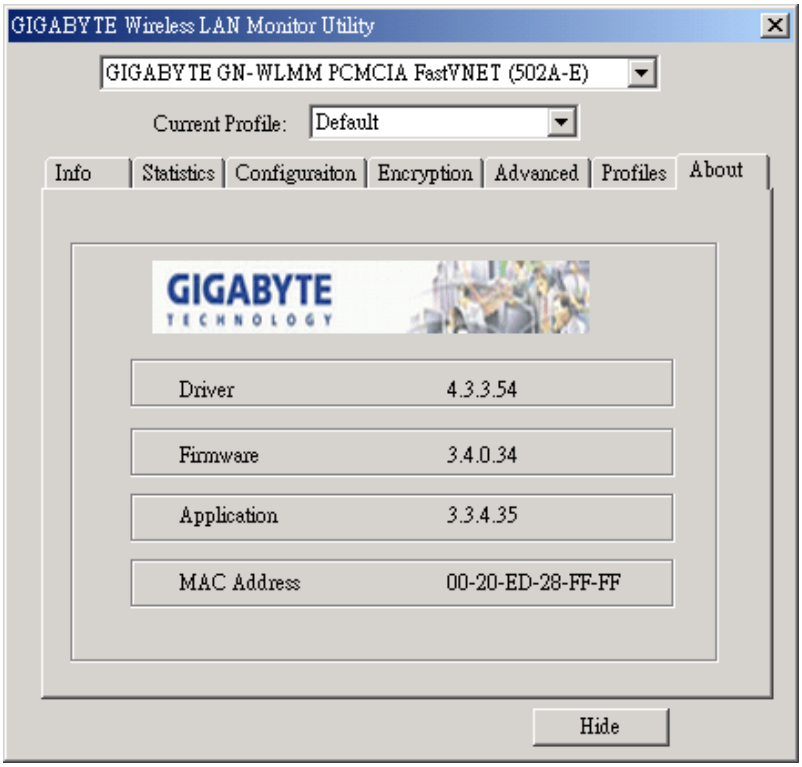
Figure 3-7. Your current profile



3-7. About

By choosing this option, you can view basic information about the utility like the Driver, Firmware and Application Version and this card's MAC address.

Figure 3-7. Version information and MAC address



Chapter 4. Specification

4-1. System		
Standards	IEEE 802.11b compliant, Wi-Fi compatible	
Host Interface	PCMCIA PC Card Type II	
Modulation	1Mbps: DBPSK; 2Mbps: DQPSK; 5.5 and 11 Mbps: CCK	
Transmission Rate	1, 2, 5.5, 11 Mbps	
Operating Voltage	3.3V/5V	
Operating Range	Open space: 100 - 300m; Indoor: 30 - 100m	
4-2. RF Performance		
Frequency Band	2.400 ~ 2.4835 GHz (subject to local regulation)	
Radio Technology	DSSS (Direct Sequence Spread Spectrum)	
Number of Channel	11 Channels (US, Canada)	4 channels (France)
	14 Channels (Japan)	13 Channels (Most European countries, ETSI)
Output Power	13.5dBm @ Nominal Temp Range	
Receive Sensitivity	- 81dBm @ 11 Mbps date rate, 8% PER	
Antenna	Two built-in diversity antennas	
4-3.Safety Regulation and Operating Environment		
EMC certification	FCC Part 15 (USA)	
	CE (Europe)	
Temperature Range	Operating: 0 ~ 50 deg C, Storing: -20 ~ 65 deg C	
Humidity	Max. 90% Non-condensing	
4-4. Software Support		
Driver	Windows 98/98SE/Me; Windows 2000/XP	
Roaming	Supports roaming.	
Network Protocol	TCP/IP, IPX, NetBEUI	
Security	64/128 bit WEP	
Management Utility	Monitors the network situation.	
4-5. Mechanical		
Dimensions	118.4 x 54 x 6 mm	
Weight	37 g	
Packaging	Packaging specially used by Gigabyte.	
LED indicator	Power and Link	